

ABSTRACT OF THE DISCLOSURE

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A pneumatic tire for vehicle wheels includes a radial carcass, a tread band, sidewalls and beads, and a belt structure. The tread band is provided with grooves on its surface for coming into contact with the ground and situated on a radial outer surface of the carcass. The sidewalls and beads anchor the tire on a wheel rim. The belt structure is disposed between the tread band and the carcass. Additionally, a fiber-reinforced elastomeric intermediate layer is placed between the belt structure and the tread band. Methods for manufacturing the pneumatic tire are also disclosed.

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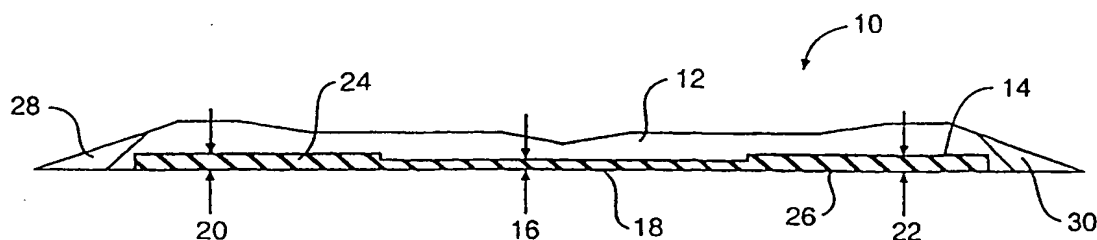
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<b>(21) International Application Number:</b> PCT/EP99/08065 <b>(22) International Filing Date:</b> 26 October 1999 (26.10.99)  <b>(30) Priority Data:</b> 98120357.3           28 October 1998 (28.10.98)   EP 60/106,627       2 November 1998 (02.11.98)   US  <b>(71) Applicant (for all designated States except US):</b> PIRELLI PNEUMATICI S.P.A. [IT/IT]; Viale Sarca, 222, I-20126 Milano (IT).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> NAHMIAS NANNI, Marco [IT/IT]; Via della Moscova, 44/1, I-20121 Milano (IT). BRUNACCI, Antonio [IT/GB]; 1 Strawberry Terrace, Carlisle CA3 9LT (GB). ZANICHELLI, Claudio [IT/IT]; Via Ronchi, 19, I-20134 Milano (IT).  <b>(74) Agent:</b> GIANNESI, Pier, Giovanni; Pirelli S.p.A., Industrial Property Dept., 222, Viale Sarca, I-20126 Milano (IT).		<b>(81) Designated States:</b> BR, CN, JP, KR, TR, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report.</i>

(54) Title: TIRE AND METHOD OF MAKING SAME



## (57) Abstract

A tire with an elastomeric intermediate layer of compound material disposed between the tread band and the belted plies where the elastomeric intermediate layer is made of a fiber-reinforced material. In one embodiment, the elastomeric intermediate layer is further characterized in that it has edge portions that are about 33 % thicker than the central portion. In this embodiment, the edge portions are about 2 mm thick and the central portion is about 1.5 mm thick. The edge portions each comprise about 2/7ths of the width of the elastomeric intermediate layer while the central portion comprises the remaining 3/7ths of the width of the layer. The elastomeric intermediate layer may be reinforced with short reinforcing fibers to improve its modulus of elasticity, among other mechanical characteristics. The short reinforcing fibers have a diameter of about 10 microns, a length of about 200 microns, and an aspect ratio of about 20. The short reinforcing fibers are incorporated in the compound material with a concentration between about 5 and 15 parts per hundred of rubber (phr). A method for constructing a tire is also described.